



Amulsar Gold Project
Transport Management Plan
Version 2
June 2016

GEOTEAM-ENV-PLN0223 Page i



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Revision History					
Revision	Date	Details	Prepared by	Checked by	Approved by
V1	May 2015	Draft for v9f of ESIA	WAI	AB	DF
V2	June 2016	V10	WAI	US	

Plan approved by	Date	
Health, Environmental, Safety and Security Manager		



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Glossary

Geoteam CJSC

The Project Amulsar Gold Mine

EBRD European Bank of Reconstruction and Development

IFC International Finance Corporation

HGVs Heavy Goods Vehicles

PPE Personal Protective Equipment

Definitions

• Management Plans (MPs): Establishes specific requirements for various important environmental and social disciplines such as water, air and waste management, spill prevention, progressive site rehabilitation/closure, stakeholder engagement, cultural heritage protection, biodiversity preservation, etc. The main users of Management Plans are the department heads, superintendents and supervisors who track action implementation and translate specific actions to workers as necessary to ensure work is conducted in a responsible manner.

- Operating Procedures (OPs): Provide details on how to manage a specific environmental or social issue or area of risk. The main users of Operating Procedures are operations superintendents, supervisors and workers.
- Work Instructions (WIs): Define specific tasks to be conducted by workers to ensure
 effective controls are in place related to their work activity. The main users of Work
 Instructions are supervisors and workers who need to understand the risks associated with
 their work and how to control the associated risks.
- Forms / Templates / Checklists: Provide the means for ensuring effective management and control of documented information.

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1 INTRODUCTION

Lydian International Ltd (Lydian) and its wholly owned Armenian subsidiary, Geoteam CJSC (Geoteam), is currently developing the Gold Amulsar Project (the Project), located in the central part of the Republic of Armenia (RA). The proposed Project will exploit the gold deposit via open-pit mining and heap-leach processing using dilute cyanide solution.

A Mining Right (MR) for the Project was granted by the RA government in November 2014. This was based, in part, on the approval of the regulatory Environmental Impact Assessment (EIA) for the Project in October 2014. Some permits also exist for ongoing exploration and development activities with additional permits required for the construction and operation phase. The Project is currently in the early stages of development, with construction activities planned to start during the second quarter 2016 subject to financing.

In parallel with the EIA, an Environmental and Social Impact Assessment (ESIA) was undertaken in compliance with, amongst others, the Performance Standards (PS) of the International Finance Corporation (IFC) and the Performance Requirements (PR) of the European Bank for Reconstruction and Development (EBRD).

In mid-2015, a Value Engineering (VE) and Optimization process was initiated, with Lydian commissioning Samuel Engineering Inc. (Samuel) and other consultants to perform engineering design on several identified VE and Optimization concepts. The objective was to reduce capital expenditure without increasing operating costs or increasing environmental and social impacts. The results from this work done in 2015, which were published in the NI "43-101 Technical Report: Amulsar Value Engineering and Optimization" in November 2015, included reduced capital and operational costs, making the Project more viable in a challenging economic environment.

Changes to the Project design as a result of the VE and Optimization work have resulted in the need to prepare a revision to the new EIA approved in October 2014 and amend the ESIA completed and disclosed in April 2015. The EIA was approved on 28th April 2016. The Project has also been subject to various health, safety, environmental and community/social (HSEC) commitments arising from the ESIA undertaken in compliance with the IFC PS and EBRD PR. The final version of the ESIA, denoted v10, published for public review and comment in June 2016, follows a series of public consultations and disclosure meetings in May & June 2016.



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A number of Commitments are made in the EIA and ESIA. The E&S commitments are being managed by Lydian and Geoteam using the Environmental and Social Management System (ESMS). The ESMS includes the Management Plans (MPs), such as this one, that detail requirements that Geoteam and its contractors will follow in order to fulfil the Project's environmental and social commitments. For the purpose of this MP, "Contractor" means all project participants, including contractors working in the field on the project including but not limited to drilling contractors, construction contractors, camp service contractors, engineers, fabricators, suppliers, etc. Contractors should implement parts of the plans relevant to their activities, issuing their own management plans in line with the Geoteam ESMS.

1.1 COMMITMENTS

ID.	Condition/actions	Public Commitment	Monitoring and compliance	Cross references and documentation	Responsibility
TR1&2	A formal pre-construction review of the road network leading to the proposed mine access points is to be undertaken to establish road condition, and assess the ability of HGVs and low loaders to negotiate bends and the road network safely and thus determine where widening is required. In particular, the area of verge that would be lost to implement mitigation measures required for low loaders to negotiate hairpin bends on the H-42 is to be determined.	The Project will continue record the condition of roads to the mine access and maintain them, should the surface deteriorate as a consequence of HGVs using the site.	Reports will be produced prior to construction and annually thereafter	Construction Phase: PEP, Contractor Management Plan; FMP	Geoteam Site Health, Environmental, Safety and Security Manager Report to: Geoteam Project Director
TR3	Formal road signage and potentially speed restrictions will be implemented in order to alert general traffic to the possibility of vehicles turning into and out of the junctions on the H-42.	Clear road signs will be used to direct project traffic to the site.	Prior to construction – all signs in place and annually to inspect condition	Construction Phase: Contractor Management Plan; FMP	Geoteam Site Environmental Manager



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TR4	Lydian code of conduct for all drivers	A code of conduct will be maintained at all times	Training manuals	Construction Phase: Contractor Management Plan; FMP	Geoteam Site Environmental Manager
TR5	Random audit of Project related traffic, routing, vehicle speed and safety, signage to inform TP and driver awareness surveys	To maintain driver safety and awareness at all times	Report for each audit	Contractor Management Plan EMP CMP	Geoteam Site Environmental Manager
TR6	An annual roads survey and traffic counts will be undertaken to record any variation in road use in comparison with baseline and ESIA prediction, for updating of the TMP as necessary. Speed and payload monitoring will also be undertaken.	Traffic counts will be taken on the H-42.	Annual report	EMP	Geoteam Site Environmental Manager
TR7	The number of trips generated by the Project will be minimised (e.g. using buses and car-sharing), particularly where staff movement is involved, with the aim of minimising the impact of all development traffic on community, heritage and environmental receptors.	Car sharing and use of Project shuttle buses to minimise traffic on roads.	Annual surveys (TR6)	n/a	Geoteam Site Environmental Manager
TR8	There will be random audits of Project-related traffic, routing, vehicle speed and safety, signage, and driver awareness, to inform TMP effectiveness.	See TR1,2 & 3	Annually	n/a	Geoteam Site Environmental Manager
TR9	The delivery of hazardous chemicals will require specific monitoring and conform to international health and safety standards, including those of the ICMC for cyanide.	The Cyanide Management Code will be conformed to as the minimum standard.	For each delivery	CMP & ERSRP	Geoteam Site Health, Environmental, Safety and Security Manager Report to:



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		Geoteam Projec	:t
		Director	

2 PURPOSE

This Transport Management Plan (TMP) has been prepared to define how traffic will be managed during construction and operation of the mine. The TMP applies to all aspects of the Project, including the management of light, heavy and abnormal loads. The TMP shall also consider the requirements of the following management plans:

- Occupational Health and Safety Management Plan (OHSMP)
- Emergency Preparedness and Spill Response Plan (EPSRP)
- Cyanide Management Plan (CMP)
- Integrated Waste Management Plan (IWMP)

This TMP addresses management procedures and application of relevant mitigation measures identified in both the EIA required for state approval, and the ESIA.

It also provides a mechanism for assessing the HSEC performance and for maintaining records of any changes in the scope of the Project. It aims to record data that is required for inclusion in the Amulsar Annual Monitoring Report (AMR) and the forthcoming Lydian Sustainability Report, regarding the effective management of traffic using Magisterial and Republic roads required to maintain operations at the mine.

The TMP assists in ensuring the continued safety of the road network with the light, heavy, abnormal loads and hazardous loads associated with mine traffic. In addition, the TMP will aim to reduce the volume of mine generated traffic during the construction, operation and closure phases of the mine.

3 SCOPE, BACKGROUND AND CONTEXT

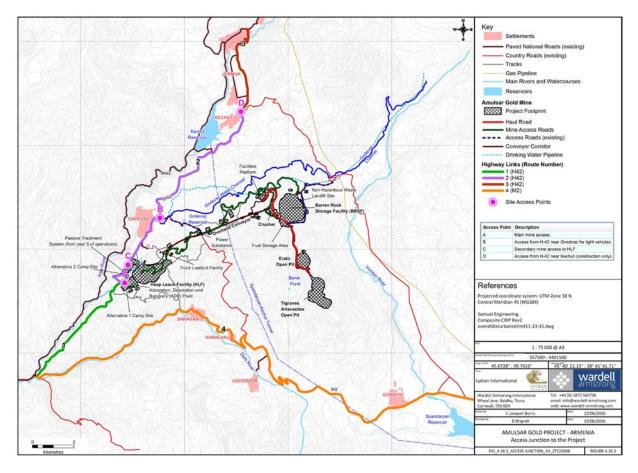
This TMP has been prepared to define how light and heavy goods traffic related to the Project will be managed during construction and operation of the mine. The TMP will apply to all haulage from and to the mine being undertaken during construction, operation and closure of the Project. This current version is focused mainly on construction phase of the Project based GEOTEAM-ENV-PLN0223



on the description in the Project Execution Plan (PEP) and impact assessment and the mitigation measures identified in the ESIA.

It also provides a mechanism for assessing the HSEC performance and for maintaining records of any changes in the scope of the Project. It aims to record data that is required for inclusion in the Amulsar Annual Monitoring Report (AMR) and the forthcoming Lydian Sustainability Report, regarding HSEC performance on a yearly basis.

There will be four junctions that provide access from the H-42 onto the mine site:



Highways Links, Local Settlements and the Amulsar Project Site

Access A, approximately 1.3km to the south of Gndevaz and on the H-42 will be the main access to the mine. Internally from this junction, mine roads connect the HLF with other mine infrastructure.

Access C, approximately 2km to the north of main site access, is a smaller junction allowing access for light goods vehicles, also into the HLF. To the north of Gndevaz, is Access B, GEOTEAM-ENV-PLN0223

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which will be designed to provide access for light and heavy goods vehicles to the conveyor loadout station and will be used during both the construction and operational phases of the mine.

Access D is the current junction used to access the exploration compound and offices. This junction will continue to be used during the construction phase for light and heavy goods traffic together with abnormal loads to deliver mine equipment and componentry. Following completion of construction, access would be limited to light vehicles only.

4 RESPONSIBILITIES

4.1 LYDIAN RESPONSIBILITIES

• Lydian Chief Operating Officer

Responsible for maintaining the effective operation of the TMP, in accordance with the Commitments Register and other management plans.

4.2 GEOTEAM RESPONSIBILITIES

Geoteam Management is responsible for:

- Ensuring that this plan is implemented and complied with; and
- Ensuring contractors are aware and agree with the commitments of this plan.

Specific Responsibilities for Geoteam Personnel are as follows:

Project Director:	Accountable for ensuring that the Amulsar project is executing the requirements of this plan;		
	Ensuring that designated managers understand their responsibilities and that they have sufficient resources to carry out their functions effectively.		
	Reviewing noncompliance incidences from either Geoteam or its contractors;		
	Develop and implement training measures as required;		
	Notifying the relevant management regarding the planning and activities covered by this plan; and		



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	Where necessary inform the EVPS on the outcomes of the plan
	Ensure that monitoring and auditing of the effectiveness of this plan is
	conducted, and provide advice on improvements as required;
	Assisting with awareness training measures with input on environmental impacts;
	Ensure appropriate records and documents are maintained to support this
	plan, particularly the plans discussed in Section 6.2
Commercial	Responsible for contracting transportation of goods to and from the mine
Manager	site;
	Ensure that the requirements of this TMP are embodied in transportation
	contracts and that all contractors and freight forward companies comply with
	the commitments of this plan;
	Assisting with awareness training measures with input on logistical issues; and
	Informing and updating the Project Director of Critical deliveries and plans
Contractors	Training personnel in Geoteam's requirements and commitments, with
	regard to transport management as defined in this plan, and all relevant laws, regulations, standards and policies;
	Ensuring that the procedures established in this plan are complied with by their workers and subcontractors; and
	Reporting any unsafe or unsatisfactory conditions to the site HESS Manager.

5 REQUIREMENTS

5.1 REGULATORY AND OTHER ESIA REQUIREMENTS

5.1.1 Armenian Regulatory Requirements

The Law on Waste regulates the collection, transportation, storage, treatment, removal, waste reduction and other activities related to waste management.

5.1.2 ESIA - Commitment Register



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Road surveys will include all roads that goods will be transported on during construction and operations. The mine equipment supplier will be accountable for delivery of the mine fleet to the site and at vendors, are indicating that they will be conducting route surveys. The largest items to be delivered to site will be the mining fleet. A formal pre-construction review of the road network leading to the proposed mine access points is to be undertaken to establish road condition, and assess the ability of HGVs and low loaders to negotiate bends and the road network safely and thus determine where widening is required. In particular, the area of verge that would be lost to implement mitigation measures required for low loaders to negotiate hairpin bends on the H-42 is to be determined. If the mine fleet can make it to site, then there will be no other loads that would present a problem and require road modifications

Hazardous materials (TR9):

The delivery of hazardous materials will require specific monitoring and conform to international health and safety standards, including those of the ICMC for cyanide. – Note this commitment that relates to the importation of cyanide will be managed by the Cyanide supplier. The Cyanide supply contract will stipulate requirements and adherence to Armenian and International law and guidelines and conditions promulgated under the International Cyanide Code.

Road signage (TR6):

Formal road signage, including speed restrictions, will be implemented in order to alert general traffic to the possibility of vehicles turning into and out of the junctions on the H-42. Installation of warning signs shall be made prior to commencement of construction.

Annual monitoring surveys (TR7):

An annual roads survey and traffic counts will be undertaken to record any variation in road use in comparison with baseline and ESIA prediction, for updating of the TMP as necessary. Speed and payload monitoring will be undertaken on roads within the mine site by Geoteam. The management of road transportation on public roads and highways must be managed by Armenian authorities

Random and unannounced surveys (TR5):

There will be random audits of Project-related traffic, routing, vehicle speed and safety, signage, and driver awareness, to assure TMP effectiveness. However, it is recognized that the company has no enforcement right or responsibility on public highways.



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5.2 ENVIRONMENTAL PROTECTION

During the construction phase regular road inspections will be conducted by Geoteam and appropriate remedial actions taken when necessary

Dust suppression techniques includes spraying roads with water, Scoria Sand will be used on icy roads. Salt shall not be used, where practical, on roads within the project.

Adequate on-site parking facilities will be provided to accommodate construction, delivery, site operations' and visitors' vehicles.

All fuel delivered, handled and stored at site will be in accordance with the Fuel Management Procedure.

All waste materials removed from site will also be in accordance with the Integrated Waste Management Plan (Ref GEOTEAM-ENV-PLN0215).

Access routes will be monitored by transport contractors to ensure that damage to walkways, driveways, accesses, bridges, walls, verges and property does not occur. Where accidental damage occurs, the liable contractor will be responsible to promptly repair any damage to public and private property, and land.

Where road improvement works involve unavoidable impacts to walls, shoulders, banks and drainage channels, these features would be either realigned as part of the design of the works or, as in the case of walls which need to be temporarily removed, re-instated following the period of construction works.

Road improvement works are to comply with the requirements of the Footprint Management Plan (ref GEOTEAM-ENV-PLN0216). Road improvement works would use materials sympathetic to the landscape character of the area in which they are proposed.

Any requirement for works to culverts and bridges over watercourses will be agreed with the local municipality and relevant national environmental authority; the contractor will be required to adhere to any special requirements which may be specified.

In all locations, works will be kept to the minimum area necessary to safely construct and develop the mine and related infrastructure. Disturbance to areas outside the boundary of the mine footprint and associated infrastructure and designated access roads by construction plant, vehicles and personnel is to be avoided. Should land need to be disturbed, a Land



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Clearance Permit (Ref GEOTEAM-ENV-FM0203) will be required, in accordance with the Footprint Management Plan (Ref GEOTEAM-ENV-PLN0216). This Land Clearance permit will be initiated, developed and agreed upon by the site Project Manager and approved by the site HESS Manager.

6 VEHICLE MOVEMENTS

The operation of vehicles on any construction or operational mine site represents one of the greatest risks to individual safety and property. Strict guidelines are required to ensure that only competent personnel operate light vehicles. Specific requirements for light vehicle movements are included in the Occupational Health and Safety Management Plan (ref GEOTEAM-HSE-PLN0016), particularly Safety Standard 6, with additional requirements from an environmental perspective discussed below.

6.1 ABNORMAL LOADS

6.1.1 Introduction

Pre-defined access routes will be determined in advance of construction works for long, wide and/or heavy load vehicles transporting components to site. The full route from the vendors point of loading via port of entry into Armenia until mine site including shipping yards and international ports, will be assessed to ensure that the equipment can in fact be transported via that route. This assessment shall include, but is not limited to, suitability of bridges, switchbacks, hairpins, overhead power, gas and water lines and access suitability and road width through cities and towns.

Transportation routes for abnormal size or hazardous loads will be developed by the contractor and agreed with the relevant authorities and local police in advance of traffic movement. Abnormal and hazardous loads that will be transported may include the following:

- Low loader (oversize equipment, such as crusher, mine fleet, etc.);
- Long loads (steelworks, tanks, tyres, etc.); and
- Container Freight (hazardous chemicals, etc.).



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6.2 DELIVERY PLAN

All materials and equipment shall be delivered to site, safely and in sufficient time to meet the agreed construction program.

Goods delivered to site will be stored in designated storage areas.

Authorisation required for transportation of goods will be obtained by the supply company or the transportation company; Geoteam will not be responsible for obtaining these authorizations. Copies of all records of transportation plans and authorisations will be provided to Geoteam Commercial Manager.

The contractors will provide their own dedicated transport plans, and the following shall be considered:

- Escort vehicles will be used for all abnormal load vehicles travelling to the site. The general preference in these situations is to employ a convoy system (escort vehicle at the front and rear) to warn vehicles of the approaching load. The escort would also help to ensure minimised disruption of flow for other road users by pulling the convoy over at pre-identified locations to allow build-up of following traffic to pass. Drivers responsible for operating the convoy should be fully briefed on the route, where and when to make the pre-defined stops, and be aware of all contingency measures in place in the event of an incident occurring. All vehicles and lead traffic management staff shall be in contact with the use of two-way radios.
- Pedestrian safety is a high priority. Therefore, additional traffic management staff (requirement to be agreed with Police prior to transportation) will be made available for any locations where pedestrians are most likely to be present. These points will be predetermined on the transport plan by the contractor.
- Clear roadways are needed to allow transport passage through geometrically constrained (e.g. curvy or narrow) sections of the route. At pre-determined locations, restricted parking will be required at time of the transportation taking place
- All drivers of abnormal load vehicles shall undergo driver's induction for each particular journey of abnormal load delivery; inductions will include:
 - Safety briefing including detail of all contingency measures,
 - o The need for appropriate care and speed control,



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- o Identification of specific sensitive areas,
- Clarification of identified route, the requirement not to deviate from this route, the requirement to adhere to convoy system and pull over at predefined points to allow build-up of traffic to pass.

As an integral part of each transport plan, a contingency plan will be developed, in consultation with the police to cover an event where an abnormal load becomes immovable on the public road, for any particular reason. Any diversions required will need to be discussed and implemented by the transporter, with police support as required.

6.3 STANDARD LOAD TRUCKS

6.3.1 Delivery Plan

General site delivery traffic (Heavy Good Vehicles (HGV's)) and some general construction traffic will not require the presence of an escort when travelling to and from site, however, drivers should be aware of the route and contingency measures. Drivers of HGV's will be briefed on good road practice and be instructed to pull over on narrow sections of road to allow build-up of traffic to pass. As with the abnormal load movements this will be detailed in the driver induction training for all relevant personnel prior to any vehicle movements. All transportation contractors will prepare transport plans. These plans will include a description of the training/induction given to all drivers. Geoteam will reserve the right to obtain details of such training/induction sessions and be provided with a copy of the company transport plan(s).

All general site traffic and construction vehicles, including concrete related deliveries, will generally operate within site working hours, or as required per specific planed conditions. Normal load construction vehicles will use a defined route, which will be agreed for each construction phase as works proceed.

If required during the duration of the project, temporary direction signs indicating local routes to site and site entrances (statutory and site identification boards) will be placed at strategic locations on local roads. Detailed signing arrangement on public roads will be developed by Geoteam in close liaison with the local municipality and the police service.

Transportation of all hazardous goods, such as chemicals, cyanide and fuel, will have an ecological risk assessment completed for each transport route in accordance to the GEOTEAM-ENV-PLN0223

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Biodiversity Management Plan (Ref GEOTEAM-ENV-PLN0219). This assessment will be commissioned by the transport contractor, and approved by Geoteam prior to transport of the materials. The transportation and delivery of cyanide is addressed within the Cyanide Management Plan (Ref GEOTEAM_ENV_PLN022) and will be adhered to in conjunction with this plan

6.4 LIGHT VEHICLES BUSES AND MEDIUM SIZE GOODS SUPPLY VEHICLES

Operation of private and all public light vehicles on the mine site will be on designated and or public roads. Operation of light vehicles on any haul roads or other restricted roads and area where mining equipment is operating will be subject to the specific regulations pertaining to those specific roads.

Adequate on-site parking facilities will be provided on site to accommodate site operatives and visitor's vehicles.

7 NOTIFICATIONS

7.1 EMERGENCY SERVICES

Consistent with the procedures defined by the transportation contractors through prior consultation, the local municipality, police and other relevant authorities will be given written notice of abnormal load deliveries associated with the project works. Weekly and daily communication will be provided as necessary in advance of vehicles leaving their points of origin. This notification will be made by the transport contractor who will provide details to the Geoteam Logistics Manager.

Geoteam is committed to working with the Police and other emergency services to ensure that essential deliveries associated with the development do not cause any significant detriment to local emergency service response capabilities.



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7.2 LOCAL MUNICIPALITIES

The local municipalities will be given advance written notice of individual abnormal load deliveries. In follow-up, weekly updates with transport timetables will be provided during the delivery period.

The transport contractor is expected to liaise with the highway authorities to identify planned engineering works which might conflict with the delivery routes and times to minimise disruption to local communities.

7.3 LOCAL COMMUNITIES

The Geoteam Social and Communications departments will facilitate the liaison with the relevant local authority and community to identify any major events in the area that need to be taken into consideration and to be taken into account for new planning of deliveries to site. This will then be communicated via the Logistic Manager to the transportation contractor

Contingency Plans

Emergency response and contingency plans will be prepared to cover general incidents in due course. These are included in the Emergency Preparedness and Spill Response Plan (Ref GEOTEAM-HSE-PLN0033), and include the following:

The emergency response and contingency plans will focus on potential impacts stemming from road blockage for a significant period. An example of such a blockage is mechanical breakdown of an abnormal load vehicle.

It is expected that the contractor will simulate a trial transportation run using vehicles with maximum length and load predicted. The trial for abnormal loads will be escorted and the police notified.

7.4 ASSUMPTIONS

The following assumptions have been made in developing this plan:

 Transportation contractors will be experienced specialists within the field of moving abnormal loads.



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- Drivers employed for abnormal loads will have an unblemished driving record and be experienced operators of the specific hauling vehicles. Geoteam will reserve the right to check licences and experience records.
- Drivers will be subject to drug and alcohol tests.
- Escort vehicles will accompany each abnormal load, and help to ensure the greatest possible safety when transporting abnormal loads. Geoteam will reserve the right to review the Contractors' proposed routes and management plans.
- It is expected that all vehicles will be maintained under a regular maintenance program, with suitable records kept by the Contractor; however, Geoteam will reserve the right to review the program and inspect all transport vehicles prior to and or during use.
- It is expected that each HGV's and those vehicles used for hazardous and abnormal loads will carry a minimum amount of safety equipment, e.g. PPE, red triangle, red cordon tape etc., as a precaution.
- Geoteam will review each contractor's transport plan before entering into a contract and ensure that the requirements of this plan is adequately addressed.

8 APPENDICES

Not applicable.

9 **DEFINITIONS**

See also Lydian HSEC STA 02 Glossary of HSEC Terms and Acronyms.

10 REFERENCES

- International Organization for Standardization ISO 14001:2015 Environmental
 Management Systems Requirements with Guidance for Use
- International Finance Corporation (IFC) Performance Standards on Environmental and Social Sustainability, 2012.



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11 AUTHORIZATION

Approved By: _		
	Executive Vice President Sustainability	Date